Wind Participation in Competitive Electricity Markets

FERC Technical Conference on Wind Energy

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Utility Wind Interest Group

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Background

- Based on panel session on wind participation in Eastern electricity markets at UWIG Albany meeting in October, 2004
- Had representatives of FERC and 5 RTOs, including the MISO, NYISO, ISO-NE, PJM, and the Ontario IMO
- Speakers described how wind participates in their markets, and responded to 6 questions posed to the panelists
- At the request of FERC, we summarized the results of the panel session for presentation at this Technical Conference, and expanded it to include the remaining RTOs, ERCOT, SPP, and CAISO, and added a comparison with the Order 888 provisions

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Questions Posed

- How is wind scheduled in energy markets?
- How are wind energy imbalances settled?
- How are wind plants' ancillary service needs and costs recognized?
- What role does wind forecasting play?
- How is capacity value for wind plants calculated?
- How is capacity value recognized in capacity obligations and capacity markets?

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What Order 888 Says

- Scheduling: No requirement for centralized markets.
- Imbalance settlement: Energy imbalance charges may apply if energy deliveries differ by more than +/- 1.5% from advance schedules. Actual payments or penalties left to discretion of transmission provider, but may be substantial.
- A/S: Transmission provider required to offer scheduling and billing services and act as purchasing agent for customers needing A/S
- Wind Forecasting, Capacity Value Calculation and Capacity Value Recognition not discussed

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Why Order 888 is Important

- Applies to all regions not included in an RTO
- Important for wind because most of the WECC is not covered by an RTO and may not be for some time
- Some of the best wind resources are located in the western region of the US
- Order 888 tariff is problematic for wind

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Changes in Generation Drive Need for Changes in Order 888

- Technical Conference is evidence we are recognizing the differences between wind and conventional generation
- RTOs being innovative and taking different approaches in how they treat wind in energy, capacity, and imbalance markets
- Order 888 silent on a number of distinguishing characteristics of wind energy
- Time to acknowledge the need to make some changes to Order 888 to reflect natural characteristics of wind and treat it fairly

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RTO Comparison on Major Features Related to Wind

- Wind often has the choice of participating in forward markets or bi-lateral contracts
- Imbalance markets settle schedule deviations without penalty
- Wind ancillary service requirements generally handled through the load serving entities and reflected in bi-lateral contract prices
- CAISO developing a model wind forecasting program for system operators
- Capacity value calculation procedures using different approaches being developed across the RTOs as an evolving process
- Capacity markets or reserve margin requirements beginning to recognize the capacity value of wind plants
- RTOs proceeding cautiously, learning by doing, staying open to change

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How RTOs are Different from 888 Rules

- Competitive electricity markets allow wind energy to be bid in on day ahead or hour ahead basis
- Balancing markets allow wind imbalances to be settled without penalty
- Large single market areas allow transmission rate pancaking to be eliminated
- Treatment as network resource resolves issues of transmission reservation and access fees
- Open and transparent transmission planning process provides for greater participation and better results

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